

Remarks

Applicant submits further amendments and a Declaration of Todd Van Der Jagt, a person of skill in the art to provide factual support for the propositions that: (1) one of skill would not find Gunlock to teach a V arch and W arch within the meaning of the terms in the claims because (a) Gunlock structure operates differently and (b) Gunlock is internally inconsistent in that while the words "W arch" are present, there is no corresponding structure pointed out in the figures to which the references appear to refer; (2) one of skill would not combine Sugie's coil springs, which provide the resilient support for an upholstery deck, with the claimed leaf springs thereby providing the combination of both active leaf springs and active coil springs.

The Nonobviousness arguments relating to inappropriateness of combining Gunlock or Sugie with Barth generally relate to claims 1 – 9, 12, with claims 10 and 11 having the "helper spring" limitation.

Drawings

The Examiner objects to the drawings on several bases.

Fig. 6 shows an arrangement where each leaf spring has a coil spring at the ends of the leaf springs. Claim 8 has been amended to clarify this arrangement – it does not preclude coil springs other than at the ends, although it does have the limitation that each leaf spring end have a coil spring.

The examiner also maintains a position relating to parallel edges, which is not entirely understood. If a bar has surfaces (the wide parts) and edges (the narrow parts) so that the section of the bar is rectangular, and the bar is bent so the surfaces are no longer parallel, it is not understood how the edges of the bar, when projected to infinity, would be anything other than parallel. Arguably, this hypothetical projection to infinity would not make the surfaces infinitely parallel, but the edges would remain so. The reference to substantially parallel surfaces has been deleted by amendment.

With respect to the edges, persons of ordinary skill understand parallelism in context. The Examiner has not explained why the reasoning in *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 338 F.Supp. 1240, 1243-1244, [172 USPQ 650] (W.D. Mich. 1972), aff'd 476 F.2d 1286 [178 USPQ 12] (6th Cir. 1973), *Maitland Co. Inc. v. Terra First Inc.* 33 USPQ2d 1882, 1888 (D SC 1994), *Chaparral Industries Inc. v. Boman Industries Inc.* (DC CCalif) 7 USPQ2d 1789 or *Advanced Cardiovascular Syst. Inc v. Scimed Life Syst. Inc.* 261 F3d 1329, 59 USPQ 2d 1801 (Fed Cir 2001), *C.P. Partnership v. Far West Products* 49 USPQ2d 1734 (WD La, 1998) or *Hassel v. Chrysler Corp.* 43 USPQ2d 1554 (SD Ohio 1997) fail to apply here. Not one case is distinguished or explained. It is enough that you could project lines from the edges that would be parallel.

The Examiner also comments about reference numeral 70. On inspection of the drawings dated 4-10-2006, Applicant sees reference numeral 70 on the bottom of the Figure. If Applicant is incorrect, Applicant would be pleased to submit second amended drawings.

112 Rejections

Claims 6, 7 and 10 have been amended to clarify dependency, eliminate redundancy, clarify antecedents and more particularly point out the claimed subject matter.

Obviousness Rejections

1. Interpretation of Gunlock

The Examiner's interpretation of Gunlock is that (a) Gunlock teaches V and W arches and (b) Gunlock explicitly teaches the use of a V arch on one side and a W arch on the other side of a spring assembly. The Examiner concedes that (assuming arguing that the V and W arches are taught at all) Gunlock's "arches" would be not oriented vertically, as are the claimed V and W arches in leaf springs, but in fact Gunlock says nothing about arches.

While the words that appear at Gunlock's col. 2 lines 22-25 is actually: "Each end supporting spring 28 has a V shaped supporting portion 30 which is secured to the rear rail 22 and a W shaped supporting portion 32 which is secured to the front rail 20." while the Examiner interprets this to be "... seat spring assembly wherein each spring has a V arch adjacent a first end of the spring and a W arch adjacent a second end of the spring". First, these are "supporting portions" not described literally as part of the springs, and never described as "arches". Second, if one looks to the drawings to see what these words mean, one sees that the elements so described are not at all apparent. When one looks for the "W shaped supporting portion 32", the only place that reference number appears are in Fig. 1 and Fig. 6, where one cannot even see anything "W shaped". There is no "32" in Fig. 2, for example, and the reference numbers do not match up with the "front rail 20". Lacking a clear illustration, it is speculation to conclude that Gunlock teaches anything that anyone would combine with a leaf spring, especially when Gunlock's discussion of his "V shaped supporting portion" speaks in terms of "arms" separated by "torsion bar" portions. (Col. 3, lines 21 – 23). Gunlock has no "arches". To be combined with Barth, one needs to make the leap from arms and torsion bars – like a vertically oriented coil spring – to leaf springs, which no one of ordinary skill would do. This is, again, assuming that Gunlock teaches something "W shaped" in any kind of useful manner, in light of the absence of anything W shaped identified by reference numeral 32 in the drawings.

2. New Facts Interpreting Gunlock – Van Der Jagt Declaration

Mr. Van Der Jagt explains this in his Declaration, Par. 6:

"6. Gunlock 3,248,748 teaches a wire spring arrangement that would not have been combined with Barth's or Santillo's leaf spring by one of ordinary skill. Wire springs and leaf springs use completely different approaches. This is consistent with Gunlock's incorporation of "torsion bar" portions (Col. 3, lines 20, 26, 42, 44, 46 - 47, 49, 52, 54. This is

explained with reference to the perspective view of Fig. 3, referring to "The main portion of the leg is a generally V shaped supporting member having divergent arm portions 62 and 64 connected by a torsion bar 66." Although verbally described as "generally V shaped", Fig 3. indicates this is not really "V shaped" as the two "arms" which might form the "V" are actually displaced from one another. The other place "V shaped" and "W shaped" is with reference to the plan view of Fig. 1 and the perspective view of Fig. 6, at Col. 2, lines 60 – 63: "Each end supporting spring 28 has a V shaped supporting portion 30 which is secured to the rear rail 22 and a W shaped supporting portion 32 ...". Looking at reference numbers 30 and 32 in the plan and perspective views, Fig. 1 and 6, one of ordinary skill would not be able to see in what way the text's "V" and "W" shapes are presented. Spring 34 of Fig. 4 is described in the context of being "V shaped" ("The main portion of the leg is a generally V shaped supporting member having divergent arm portions connected by a torsion bar 76. The upper arm portion has a straight wire 78 connected between torsion bar 74 and an intermediate torsion bar 80'. The torsion bars 80 and 76 are connected by a diagonal wire section 82. The lower arm portion 84 is a straight wire section that interconnects the torsion bar 76 and a foot portion 86 of the leg.") with the same intermediary torsion bar which makes the shape not "V shaped" at all, except arguable in a certain orthographic projection where the point of view hides the true shape. It is apparent to me that the items in Gunlock's Fig 3 and 4 act more as coil springs than as an extension spring that is the principle behind the claimed W and V arches in the claimed leaf springs, plus the separate claimed helical springs in the present application. If there were V or W shapes apparent in the drawings of Gunlock, the incorporation of them in wire springs, coupled with the torsion bar rationale can be seen by one of ordinary skill as teaching away from the claimed upwardly opening V and

W in combination with leaf springs, and certainly teaching away from the combination of leaf springs plus coil springs."

While applicant has previously argued the foregoing logically, the Examiner interpreted Gunlock's teaching as properly combinable with Barth. As one of skill in the art has now, in detail, analyzed the premise, that new evidence should be considered. Thus, Gunlock neither teaches "arches" nor would one look to the wire structure to combine with a leaf spring. This is not a matter of "bodily incorporation of the W arch of Gunlock into the assembly of Barth" it is a matter of recognizing that no W arch is taught in Gunlock, nor would Gunlock's verbal "W shaped supporting portion" with no clear reference in the drawings, teaches anything that would be combined with Barth. Gunlock's wire springs using torsion bars and arms teach away from leaf springs or "arches" as claimed.

3. Sugie Would Not Be Combined With Barth

The Examiner stated that Sugie taught a cross piece 24 and leaf springs 22. Applicant pointed out the express language of Sugie, namely, at column 4, lines 58 – 67 Sugie's elements 22 are not leaf springs at all, they are "thin steel wires 22" which, of course, function much differently than leaf springs:

"Specifically, the steel spring 12 is constructed to include numerous thin steel wires 22 arrayed in parallel at a predetermined interval in the longitudinal direction of the seat, three rods 24 arranged at the two right and left ends and at the center of the thin steel wires 22 and extending in the longitudinal direction for connecting the numerous steel wires 22, and a plurality of coil springs 26 for connecting the right and left rods 24 and the frame member 20"

Despite this, in the latest action, the Examiner still says (pages 5 and 6) "Sugie et al. teach in figure 8 the use of a seat spring assembly including a cross piece 24, the cross piece spanning and substantially perpendicularly interconnecting second ends of leaf springs 22, the leaf spring second ends being attached to the cross piece, and a plurality of coil springs, the coil springs

connecting the cross piece to a frame end 20 to transmit loads from the interconnected leaf springs through the coil springs to the second frame end.” There is a highly material difference between leaf springs and thin wires, and there is a patentable difference in the combination, in a seat, of two types of springs having different properties, particularly in a narrowly claimed arrangement.

4. Factually, Sugie Does Not Teach What The Examiner Says.

Apart from the confusion between leaf springs and thin wires, the additional aspects inferred by the Examiner in Sugie are not supported by the knowledge of one of skill in the art. The Van Der Jagt Declaration Paragraph 7 (First)¹ states:

“7. I worked at Starcraft Corporation where we used “flexolator” style upholstery platforms for vehicle seating. Sugie 6,158,815 uses a “flexolator” platform, using a wire grid to support upholstery foam in a vehicle seat, notable for needing a limitation in vertical travel. The flexolator wire grid platform is intended to be used for supporting the foam, and not considered a resilient member in seating design. The longitudinal wires in Sugie hold the transverse wires in position and the transverse wires are considered to act primarily in tension, with all resilience designed to be provided by the coil springs on the sides. Sugie would not typically be combined with a leaf spring to add coil spring resiliency acting in combination with leaf spring resiliency, with the coil spring oriented longitudinally and parallel to the leaf spring length.”

While applicant pointed this out logically – Sugie’s deck is like a grille, to hold things up, not like a spring assembly to provide resilience – the Van Der Jagt Declaration now establishes this factually. The Examiner’s interpretation of Sugie is mistaken. Because the understanding of the way Sugie works is

¹ Through a typographical error, there are two numbered paragraphs “7.” which will be referred to as Paragraph 7 (First) and Paragraph 7 (Second)

mistaken, the combination of Sugie is also mistaken. One would not combine Sugie with the other limitations of the claims.

5. Evidence of Nonobviousness

The analysis of obvious must follow, as explained in *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 167 L.Ed.2d 705, 550 U.S. 398 (2007), the tests of obviousness of *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 86 S. Ct. 684, 15 L. Ed. 2d 545 (1966):

"Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *Id.*, at 17-18, 86 S. Ct. 684, 15 L. Ed. 2d 545.

Applicant has explained above why Gunlock and Sugie would not be considered within the realm of applicable prior art, or, if so, why they would not have been combined by one of ordinary skill. Indeed, if anything, they teach away from the claimed invention by urging the use of wire springs, not leaf springs.

Significantly, there is also evidence of secondary considerations – sometimes called objective evidence of non-obviousness. *Custom Accessories Inc. v. Jeffrey-Allan Industries Inc.* 1 U.S.P.Q.2d 1196, 807 F.2d 955 (Fed Cir, 1986). Essentially, it must be understood that the present invention is a combination of two types of active springs in a seat – leaf and coil, while Santillo and Barth are leaf springs alone, Gunlock is wire springs alone, and Sugie is, for resilience, coil springs, plus a wire grid present as an upholstery support, not for resilience. In the real world, this yields unexpected results and commercial success.

The Van Der Jagt Declaration, Paragraph 5 states:

"5. The invention taught in Maas, Serial No. 10/595,330, entitled "Double Spring Function Upholstered Furniture Spring Assemblies" has the following advantages, attributes and commercial results:

- (a) it is usable in a wide variety of seating configurations enabling customization for desired resilience, performance, "feel" which are important to sales;
- (b) the combination disclosed and claimed permits greater variety in "feel" and customization because common parts are used, but can be arranged in different configurations such as, but not limited to:
 - (i) more leaf springs for "harder" feel;
 - (ii) fewer leaf springs for "softer" feel;
 - (iii) different leaf spring spacing for different feel;
 - (iv) more coil springs for "harder" feel;
 - (v) fewer coil springs for "softer" feel;
 - (vi) different coil spring spacing and attachment points for different feel;
 - (vii) differing combinations of the above such as more leaf springs but fewer coil springs for different "feels";
 - (viii) adaptability to and permitting of more and varying styles of finished furniture because the functional aspects permit greater variation in furniture geometry, such as, but not limited to, shallower, lower seating with the same "feel" as deeper seating;
 - (ix) the availability of potentially more support of cushion material provided by the claimed spring arrangement permits greater choices in selecting the type and geometry of cushion material;
 - (x) the foregoing combinations are available by varying the number and location of identical component parts, with an

accompanying savings in manufacturing inventory when compared to prior art solutions to provide different "feel" to seating;

(xi) the foregoing combinations are unavailable with the Barth configuration in which the sole resilience is provided by leaf springs fixed in a frame."

There are more than ten different advantages ((b) (i) – (x)) that result from the particular claimed features. These advantages are unavailable in the prior art. They are also not provided, suggested or taught, and do not result from teachings of the cited art. The claimed elements are material and nonobvious to a person of ordinary skill, in the real world, because there are many more advantages than those apparent from the Examiner's hypotheticals, and none of these advantages are available from the mere combination suggested by the Examiner. Things like adapting furniture "feel", providing better and more compact geometry to permit more varied styles, and the advantages in inventory by having the claimed components available to be adapted as claimed, are strong evidence of Nonobviousness.

An additional item considered objective evidence of nonobviousness is commercial success. Van Der Jagt paragraph 7 (Second) points this out:

"7. When originally planned, Applicant envisioned using the claimed spring arrangement in only selected products. The majority of the product line was to remain using prior art configurations such as Barth or even Santillo 3,156,460 or Crahan 2,788,844. Customer (dealer) and consumer acceptance was so great within approximately the first one year of sales that the use of the spring arrangement has been expanded into approximately ninety percent of Applicant's furniture products. These advantages include those described above in connection with paragraph 5 (a) - (b) (i) – (xi). This ability to address varying occupant comfort needs, manufacturing efficiencies because of adaptability and the ability to design more styles because of adaptability are areas where the claimed spring

arrangement directly contributed to commercial success of the finished product.”

A major reason commercial success is such good evidence of nonobviousness is that it evidences someone’s real commitment of hard-earned capital to put an invention into production and product acceptance similarly indicates the parting by customers of their hard-earned dollars. While the claimed invention was originally expected to be a small fraction of production, it has instead become a mainstay. This is strong evidence of Nonobviousness.

6. The Helper Spring Claims, Claim 11, Claims Dependent Therefrom and Claim 10

It appears that as a result of the interview it is now understood that the “helper spring” claimed is not like the Santillo “supplemental leaf spring 46” which is shown in Santillo Fig. 1, 2 and 3 as held at one end by clips 57 and rivets 47 and at the other end by clips 54 and rivets 58. Applicant believed that the nature of the claimed helper springs – one end contacting only when “help” was needed – was clear from the earlier phraseology having it attached at one end, but to make the structure more distinctly claimed, has amended to describe this feature as being “cantilevered” or having a “free end”.

Conclusion

It is respectfully submitted that the cited art neither teaches the claimed limitations nor would the cited art be combined with Barth’s leaf spring seat unit. The Santillo – Barth line of development for Applicant’s products’ using leaf springs in furniture remain commercially novel and involve unique structure considerations. The evidence of record, including discussion of those references herein, and the Van Der Jagt Declaration, establish that Gunlock and Sugie would not have been combined with leaf spring art by the person of ordinary skill. They neither teach the elements the Examiner suggests, nor is it fair to combine these different approaches.

This amendment is considered to be responsive to all points raised in the office action. Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully Submitted,



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